Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1 (currently amended): A matrix comprising solid ~~metal oxide~~ particles ~~in physical contact with each other~~ and interstitial space comprising a cross-linked interstitial polymer network covalently attached to said particles which forms an integrated contiguous network ~~which spans the particles and which further comprises a functional group comprising a member of a binding pair~~ in said interstitial space, wherein said interstitial polymer network is permeable to fluids.

Claims 2-5 (cancelled).

Claim 6 (previously amended): The matrix of claim 1 wherein said interstitial polymer network further comprises a tether molecule.

Claim 7 (previously amended): The matrix of claim 1 wherein said solid support further comprises a blocking reagent.

Claims 8-11 (cancelled).

Claim 12 (previously amended): The matrix of claim ~~26~~ 34 wherein said reactive moiety comprises a chemical catalyst, an enzyme or a chemical reagent.

Claims 13-25 (cancelled).

Claim 26 (cancelled).

Claim 27 (cancelled)

Claim 28 (currently amended): The matrix of claim ~~26~~ 1 wherein said solid support further comprises a blocking reagent.

Claim 29 (new): The matrix of claim 1 wherein said solid particles comprise metal, metal oxide, resin or glass.

Claim 30 (new): The matrix of claim 1 wherein said solid particles comprise silica.

Claim 31 (new): The matrix of claim 1 further comprising a functional group covalently attached to said interstitial polymer network.

Claim 32 (new): The matrix of claim 31 wherein said functional group comprises a member of a binding pair.

Claim 33 (new): The matrix of claim 32 wherein said member of said binding pair is a cationic or anionic moiety.

Claim 34 (new): The matrix of claim 31 wherein said functional group comprises a reactive moiety.

Claim 35 (new): The matrix of claim 1 wherein said cross-linked interstitial polymer network comprises pores comprising one dimension of at least 100 nanometers.

Claim 36 (new): The matrix of claim 1 wherein said cross-linked interstitial polymer network comprises pores comprising one dimension of at least 500 nanometers.